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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,065	05/06/2005	Shigeru Oga	123713	2715
25944	7590	12/23/2008	EXAMINER	
OLIFF & BERRIDGE, PLC			PRICE, CARL D	
P.O. BOX 320850				
ALEXANDRIA, VA 22320-4850			ART UNIT	PAPER NUMBER
			3749	
			MAIL DATE	DELIVERY MODE
			12/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,065	OGA ET AL.	
	Examiner	Art Unit	
	Carl D. Price	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 09 October 2008.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 9-15 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 9-15 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application

6) Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **10/09/2008** has been entered.

Response to Arguments

Applicant's arguments with respect to claims **9-15** have been considered but are moot in view of the new ground(s) of rejection.

Applicant has amended the claims to be of a scope not previously considered. Consistent with applicant's argument that the prior art relied on in the previous office action fail to show, disclose and/or teach certain aspects of applicant's invention now recited in the claims filed on **10/09/2008**, applicant has amended the claims to include at least the following:

Claim 9 (Currently Amended)

“...means for introducing a straight-line air current into the burner tile, which straightly flows in a vicinity of the burner nozzle from the first end to the second end of the burner tile at which there is an opening of the burner tile by operation of a blower, the straight-line air current flowing straightly through a central portion of the burner tile from the first end to the second end such that the straight-line air current extends through an entire region through which combustion occurs, and ...”

The newly cited prior art reference of **US 4622007 (Gitman)**, along with **JP 56-146913** (of record) as well as the previously cited **US 4,974,780 (Nakamura et al)**, are now relied on in response to the scope the claims now presented and in order to address applicant's arguments.

See the examiner's action herein below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

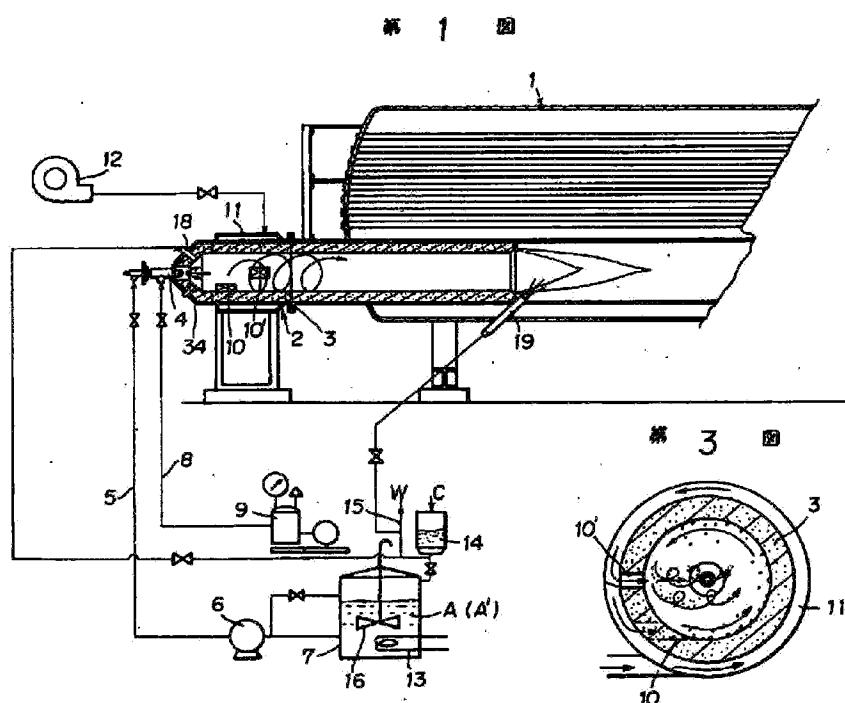
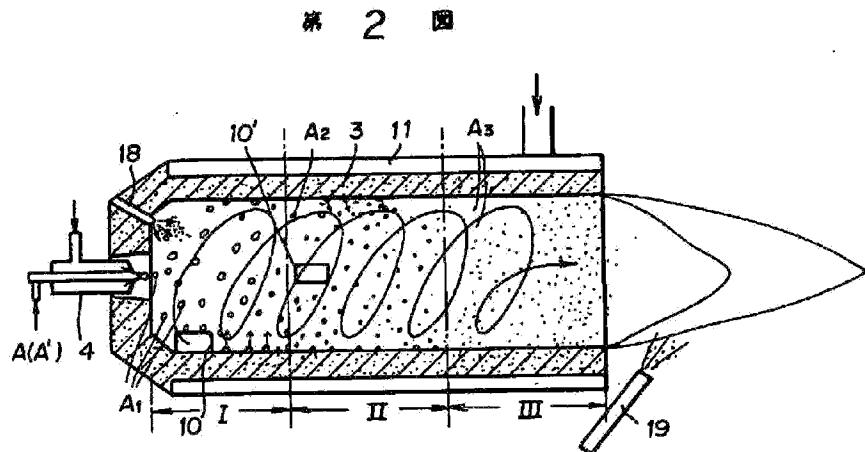
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims rejected under 35 U.S.C. 103(a)

Claims 9, 10 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 56-146913** (of record) in view of **US 4622007 (Gitman)** (newly cited).

JP 56-146913 discloses and shows a burner to promote the evaporation of fuel close to a cylindrical wall, atomization, dispersion, and combustion of the fuel by a method wherein a high viscous heavy oil fuel is injected into the cylinder under a high pressure air with drop form, then the heated air is helically and linearly blown to mix and disperse the fuel with the injection air.

JP 56-146913 includes a main body of the combustion device provided with a front cylinder 3 and an injection nozzle 4. The injection nozzle 4 is provided with an oil injection pipe 21 having an injection port 211 formed at its leading end and a connection 26 for the pump 6 at its rear end, and with an air injection pipe 22 concentrically enclosing the oil injection pipe 21, the air injection pipe 22 is provided with a connection part 23 against the piping of the rotary blower 9 and at the same time at its leading end is arranged an air injection hole 24 for use in injecting a high pressure air under a ring form at its outer circumferential position of the injection port 211 of the injection pipe 21. At the outer circumference of the front cylinder is formed air jacket 11 communicating with each of the air blowing ports 10, 10' at its one part and communicate blower 12 at its other part.



JP 56-146913 shows and discloses the invention substantially as set forth in the claims with possible exception to:

- means for introducing a straight-line air current into the burner tile, which straightly flows in a vicinity of the burner nozzle from the first end to the second end of the burner tile at which there is an opening of the burner tile by operation of a blower, the straight-line air current flowing straightly through a central

portion of the burner tile from the first end to the second end such that the straight-line air current extends through an entire region through which combustion occurs.

US 4622007 (Gitman) teaches, from applicant's same fluid fuel fired burner field of endeavor, providing a liquid fuel burner with means (7; 31) for introducing a straight-line air current into the burner tile, which straightly flows in a vicinity of the burner nozzle (11; 28) from the first end to the second end of a burner tile (21) at which there is an opening of the burner tile by operation of a blower, the straight-line air current flowing straightly through a central portion of the burner tile from the first end to the second end such that the straight-line air current extends through an entire region (column 2, lines 43-55) through which combustion occurs.

In regard to **claim 9**, the recitation in the preamble that the combustor is "for combusting animal and vegetable oils" it has been held if the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999); see also MPEP 2111.02. Further, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In this case, as the combustor of **JP 56-146913** is intended for liquid fuels it would clearly be capable of operating using the animal and vegetable oils recited. Therefore, **JP 56-146913** meets this recitation in the preamble.

In regard to the recitation of "a means for supplying animal and vegetable oils..." it appears applicant intends to invoke 35 U.S.C. § 112 6th paragraph. This recitation satisfies the 3-prong analysis set forth in MPEP § 2181 and therefore has been regarded as invoking 35 U.S.C. § 112 6th paragraph. The elements that correspond to the "means for" clause are the fuel

source F. The examiner has found that the prior art element of a fuel source and fuel inlet **JP 56-146913** being intended for supplying "heavy oils, etc" (A) performs the functioning specified in the claim, (B) is not excluded by any explicit definition provided in the specification for an equivalent, and (C) is an equivalent of the means plus function limitation. See MPEP § 2183.

In regard to **claims 9, 10 and 12-15**, for the purpose of providing means to extend the flame to, for example, contact or penetrate a material being heated, it would have been obvious to a person having ordinary skill in the art to modify the fuel and oxidant arrangement of **JP 56-146913** such that a straight-line air current into the burner tile, which straightly flows in a vicinity of the burner nozzle from the first end to the second end of the burner tile at which there is an opening of the burner tile by operation of a blower, the straight-line air current flowing straightly through a central portion of the burner tile from the first end to the second end such that the straight-line air current extends through an entire region through which combustion occurs, in view of the teaching of **US 4622007 (Gitman)**.

In regard to **claim 10**, the nozzle (24) of **JP 56-146913** delivers atomized fuel toward the axially central area of the turning air.

In regard to **claim 12**, the burner tile of **JP 56-146913** is of cylindrical configuration.

In regard to **claim 13**, it appears by reciting "a means for adjusting the position of the ignition flames in the central are of the burner tile" applicant intends to invoke 35 U.S.C. § 112 6th paragraph. This recitation satisfies the 3-prong analysis set forth in MPEP § 2181 and therefore has been regarded as invoking 35 U.S.C. § 112 6th paragraph. The elements that correspond to the "means for" clause are the **JP 56-146913** ignition burner (not referenced; adjacent 34). The examiner has found that the prior art elements of the igniter means: (A) perform the functioning specified in the claim, (B) are not excluded by any explicit definition provided in the specification for an equivalent, and (C) are an equivalent of the means plus function limitation. See MPEP § 2183.

In regard to **claim 14**, **US 4622007 (Gitman)** accounts for selective adjustment between sonic and supersonic air flow. In view of this teaching, it would have been obvious to a person having ordinary skill in the art to further provide **JP 56-146913** with such a means.

In regard to at least **claim 15**, the igniter (not referenced; adjacent 34) of **JP 56-146913** would be capable of providing sufficient heat energy for allowing continuous propagation of combustion of the employed liquid fuel as the entire purpose of the igniter is to create a flame that is maintained at the nozzle exit and propagates in flames tube.

Claims rejected under 35 U.S.C. 103(a)

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 56-146913** (of record) in view of **US 4622007 (Gitman)** (newly cited), as applied to claim 9 above, and further in view of **US 4,974,780 (Nakamura et al)**.

As noted above, **JP 56-146913** discloses substantially all the limitations of claim 11. However, **JP 56-146913** does not necessarily include "a means for adjusting the mass of the fuel droplets atomized...". While **JP 56-146913** clearly shows an atomizing nozzle (24), the reference does not disclose an ultrasonic generator. To remedy the deficiency the examiner turns to Nakamura. Nakamura shows a fuel atomizing nozzle that includes an ultrasonic generator (10).

Therefore, in regard to **claim 11**, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the fuel atomizing nozzle of **JP 56-146913** to incorporate an ultrasonic generator such as taught in **US 4,974,780 (Nakamura et al)**, as such a device is recognized in the art to desirably provide for effective fuel atomization (see Nakamura col. 3, lines 65 through col. 4, line 9).

Conclusion

See the attached USPTO for, 892 for prior art made of record and not relied upon which is considered pertinent to applicant's disclosure.

USPTO CUSTOMER CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl D. Price whose telephone number is (571) 272-4880. The examiner can normally be reached on Monday through Friday between 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Carl D. Price/
Primary Examiner, Art Unit 3749

cp